

12th Annual Coal Stripping Number

COAL MINING

UNIVERSITY MICROFILMS
313 N 1ST ST
ANN ARBOR, MICH

April, 1955

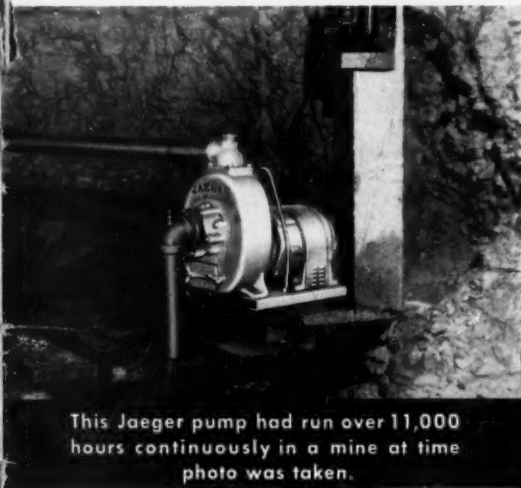
Volume ³²31, No. 4

Highway's

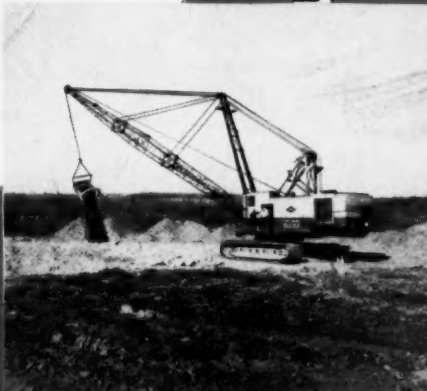
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Michigan Model 75-A Tractor Shovel
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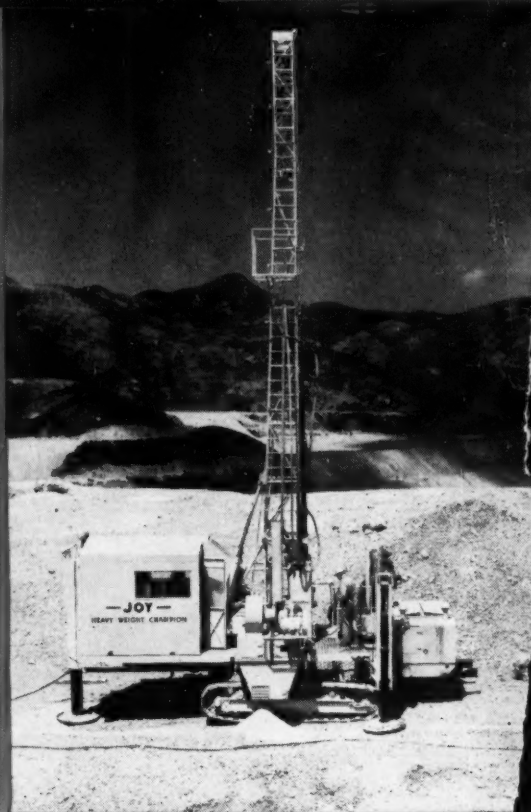
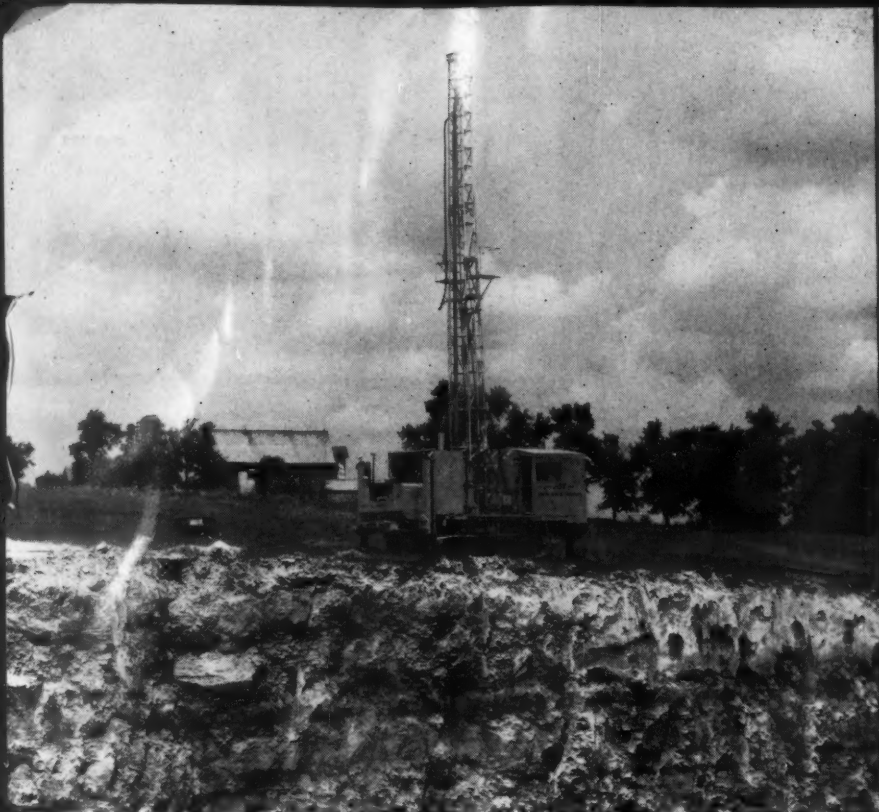
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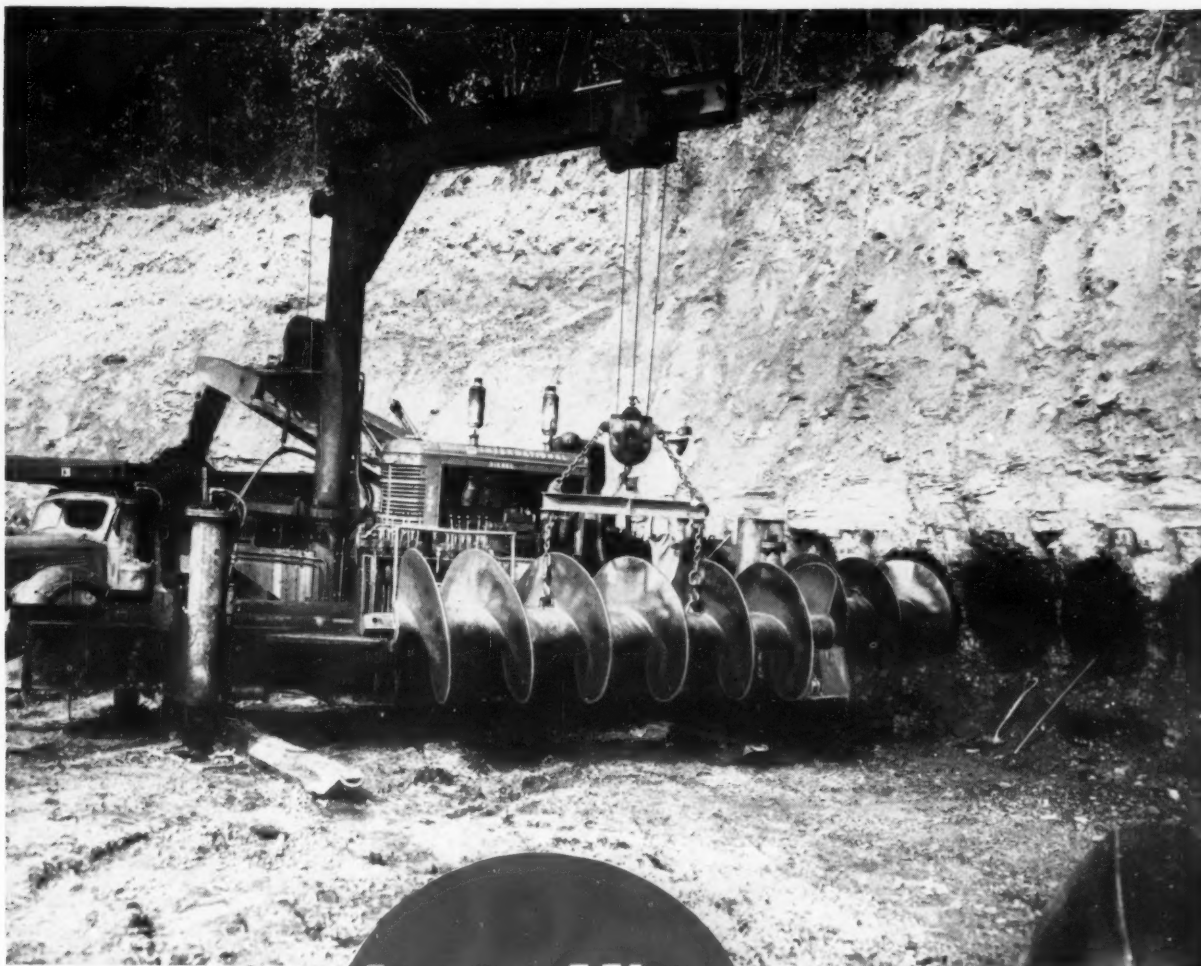
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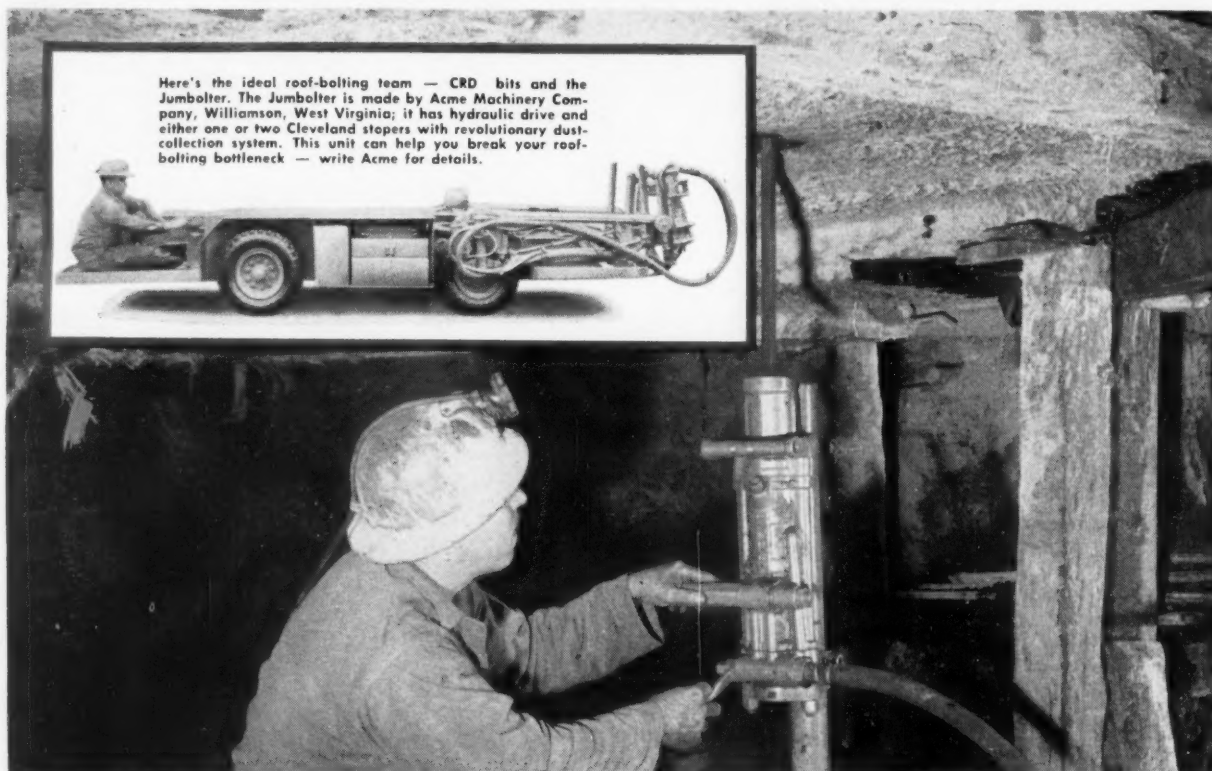
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Rugged
Powerful*
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DRILLS**

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So the price alone of CRD one-use bits can help you cut your drilling costs. But there are other reasons to use CRD bits, too.

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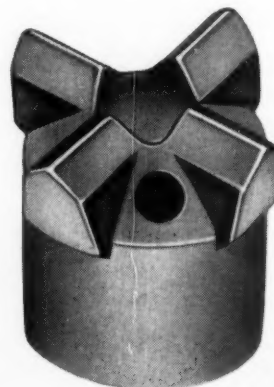
Bulletin RD-29 gives detailed information. A copy is yours for the asking — just write for it.

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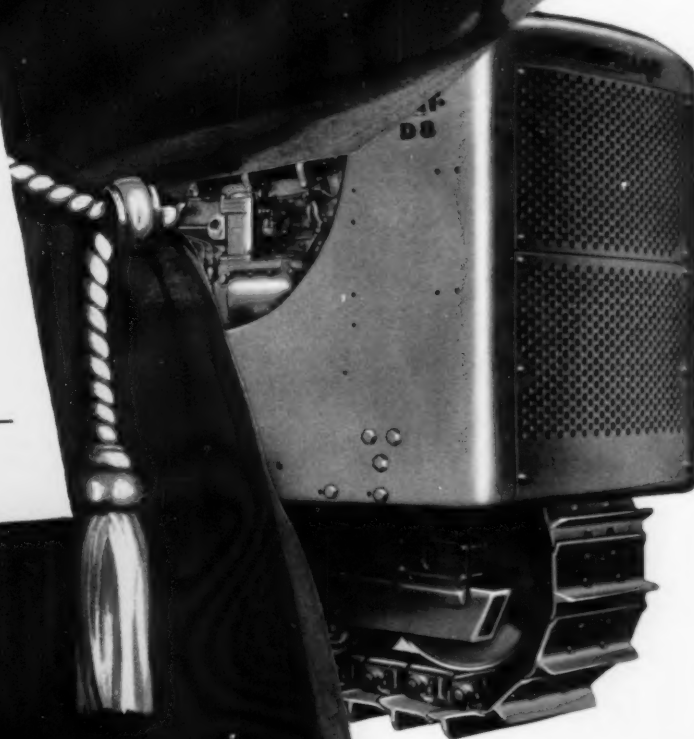
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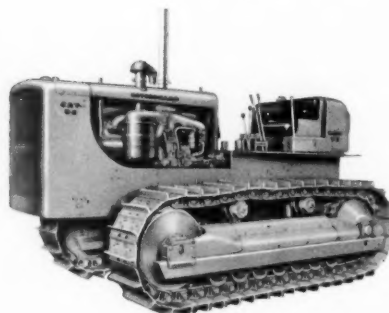
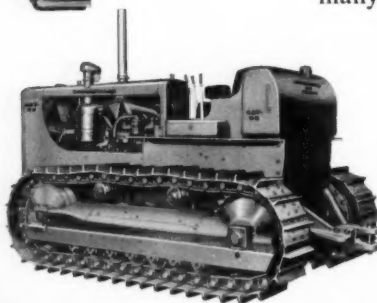
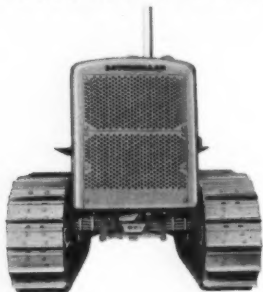
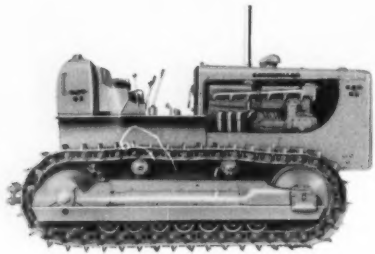


A GREAT NEW

CATERPILLAR

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TRACTOR

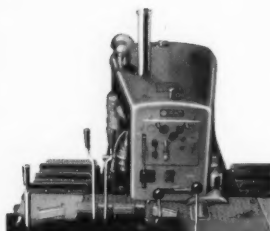


Any way you look at it, the new CAT* D8 Tractor sets a new standard in performance. From engine to transmission to tracks, big, new power goes to work. Now, 191 engine HP develops 155 HP at the drawbar. Now, the famous D8 adds extra work capacity to your big jobs. To match the big, new power of the D8, many major components have been redesigned. You can count on lower costs and extra profits—bid your big jobs based on new D8 performance.

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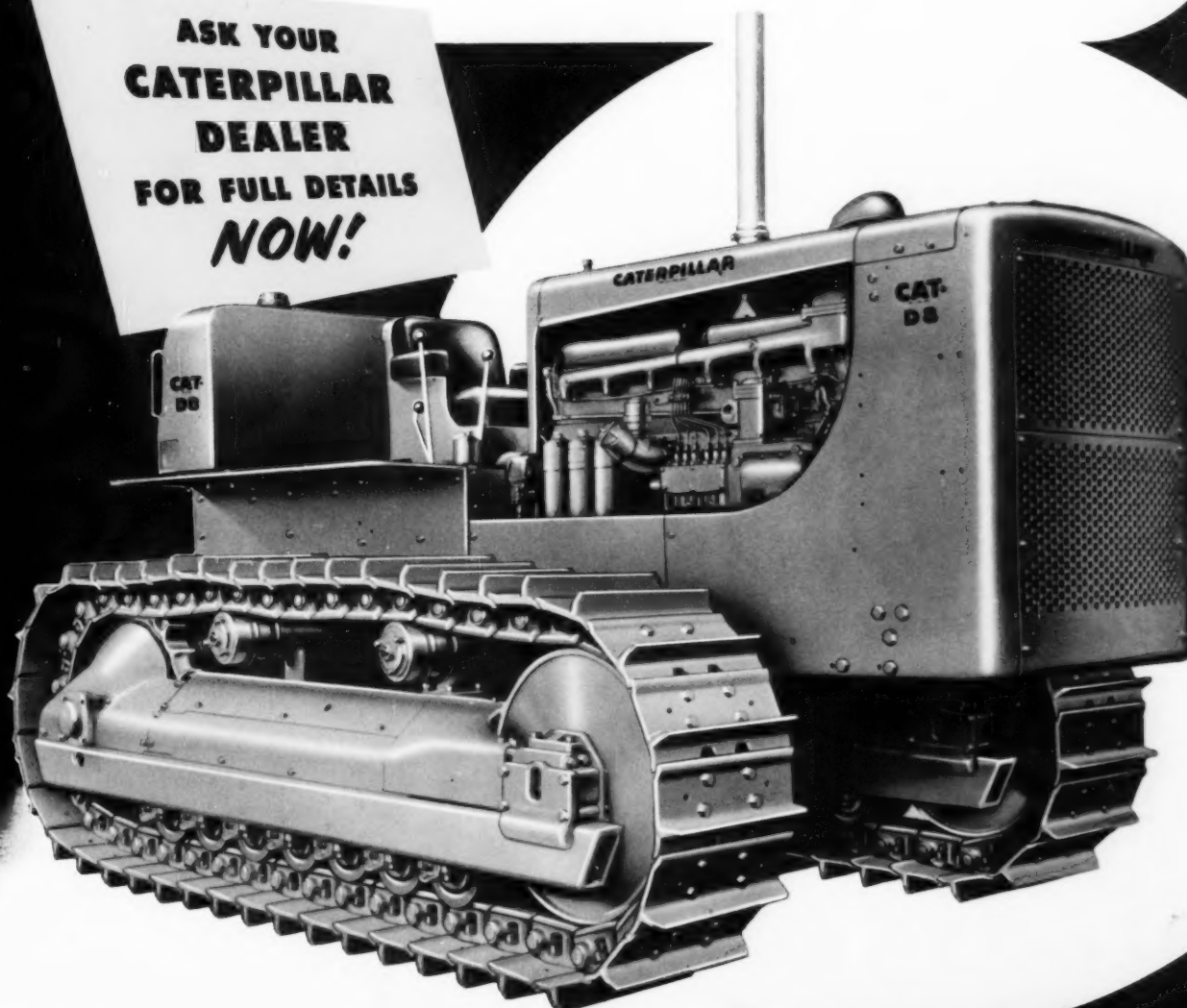
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CATERPILLAR
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CAT D8
TRACTOR PERFORMANCE!**

THE SYMBOL "D8" has long been the standard of big tractor performance, but now, think in terms of the new Cat D8 Tractor and what it will mean to you on your jobs.

First, count on more work capacity. Bank on maximum fuel economy. Depend on uninterrupted long life. Then, match this performance with new matched equipment—new cable controls, new, stronger and larger Cat 'Dozer blades. As a pulling and pushing tractor, add up extra scraper yards every shift.

These new performance bonuses are certain to change your bid figures and profit possibilities. As your Caterpillar Dealer, we are most anxious to visit with you and point out the many benefits the new Caterpillar D8 Tractor will bring to your jobs.

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Self-sharpening **ESCO** Tested Points are cast of special **ESCO** 12M*, heat-treated for shock absorbing toughness and then *individually Brinell tested* to be sure they have exactly the correct degree of abrasion-resisting hardness for faster digging and longer life. Stop taking chances on point performance.

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squeezes the profits out of stripping . . .

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AUGER MINER



CARDOX Surface AugerMiner teams up with mechanized loading for fast, lower-cost coal production.

Restores Abandoned Workings to Profitable Production

When excessive overburden puts a stop to conventional stripping, CARDOX Surface AugerMiners put mines back into profitable production. Drilling 100 to 120 feet, they salvage volume tonnage at a cost usually far less than for the original working. This "bonus" tonnage is *easy to get*.

CARDOX Surface AugerMiners are simply trucked or towed on their detachable wheels to the exposed surface. They are self positioning to the height of the seam. A rugged, 155 H.P. engine drives augers that drill holes up to 38 inches in diameter. AugerMiner coal is *clean and free*

of rock or shale — because directional control keeps the auger boring into the best part of the seam. Coal can be loaded mechanically into trucks without further processing. A built-in retriever makes it easy to add or remove the 6-foot auger sections.

If you have a seam where overburden has squeezed the profits out of conventional stripping, you may have abandoned your best paying tonnage! Investigate the CARDOX Surface AugerMiner. See your CARDOX Representative — or write for AugerMiner Bulletin.

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COAL MINING

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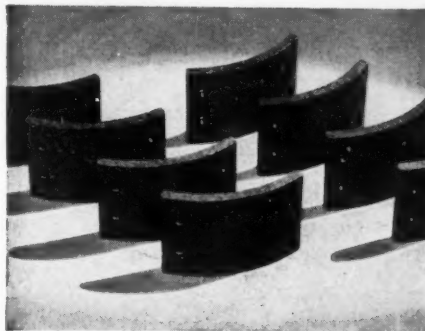
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A STRAIGHT LINE

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Model 6-C Austin loads blended clay from stockpile into haulage truck at Denver Sewer Pipe & Clay Company, Denver. Loader is also used to blend various grades of raw clay and to stockpile mixtures, ready for crushing.



Raw clay is mixed and stockpiled in one operation by the Austin Overshot Loader. Straight-line cycle speeds movement of material . . . keeps working area smooth and level.



cut costs . . . increase production . . . with

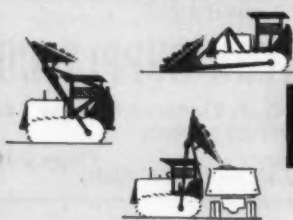
AUSTIN OVERSHOT LOADERS

The Austin Overshot Loader dozes into its load—raises it overhead—then dumps it into the haulage unit in a fast *straight-line* cycle. Austins save time on every load . . . boost production . . . reduce operator fatigue because they eliminate time-consuming swinging or turning of the tractor. Complete loading cycle requires only 20 seconds.

Austin Overshot Loaders are available for installation on Model D-2, D-4, D-6, D-7 and D-8 Caterpillar tractors. Bucket capacities range from 1 to 4 cubic yards.

AUSTIN OVERSHOT LOADERS ARE SOLD BY CATERPILLAR DEALERS EVERYWHERE. ASK FOR A DEMONSTRATION.

AA-928



AUSTIN

DIVISION

Central Ohio Steel Products Company
Galion, Ohio • Denver, Colorado

Do You Know?

Living gristle can be fashioned into caps for repair of diseased joints, Dr. John J. Flanagan of South Orange, N. J., announced at the meeting here of the American Academy of Orthopaedic Surgeons.

Metal, plastic and fascia from thigh muscles have heretofore been used for this purpose with varying degrees of success. Dr. Flanagan for years has been trying to find a better solution to the problem of developing a cap of living tissue such as exists in a normal joint.

The living gristle, or cartilage, cap has so far been used on only four patients and Dr. Flanagan stressed that more time is required to see how it will stand up over a long time.

The first patient, a 43-year-old practical nurse, underwent the hip-joint operation three years ago. Today she is working regularly and has excellent function of the hip without pain. One of the four operations was performed on a 12-year-old girl, suffering from degenerative arthritis, and so far the results are encouraging.

Since no source of cartilage of the size needed is available in the human body, Dr. Flanagan "borrowed" an idea from the plastic surgeons and constructed a perforated Vitallium mold which would hold bits of diced cartilage taken from a patient's ribs. He implants the mold, containing the cartilage, in the abdominal wall for a period of four months. During this time the cartilage cells proliferate and grow together, making a smooth cartilage cap in the shape of the mold.

Tiny blood vessels penetrate perforations in the mold and nourish the cartilage to keep it alive. Then the cartilage cap is removed from the mold and placed over the thigh bone which it has been tailored to fit.

Within four weeks, the patient is ambulatory with gradual weightbearing and intensive physical therapy.

Dr. Flanagan is presently working on a method whereby he hopes to transplant the diced cartilage directly without the abdominal wall implantation. He is also studying the use of cartilage that has been preserved in cartilage banks.

● Growing up in the heart of a coal region can often result in persons taking the coal itself for granted. But a young South Charleston High School senior here experienced the opposite reaction. Carol Irene Hawkins, 17 year old, wanted to know more about the material that so heavily influences her city's life.

Her interest in coal led to a microscopic study of the constituents of coal, which she undertook as a project for the Science Talent Search for which she has been selected one of a group of 40 winners. Miss Hawkins went to Washington to attend the Science Talent Institute from Feb. 24 to Feb. 28 to compete for \$11,000 in Westinghouse Science Scholarships.

The young scientists, who hopes some day to become a guidance counselor, calls it fortunate that she had lived in the heart of West Virginia's bituminous coal region and a chemical industry center. Along with her biology teacher and industry's scientists there she credits these factors as prompting her study.

In her study, Miss Hawkins used microscopes with both reflected and transmitted light. After completing a study of eight

Here and There in the Coal Industry

● Rocky Mountain Coal Mining Institute will hold its annual meeting June 26 to 29 at Glenwood Springs, Colo. Technical papers will feature coal mine operations and safety, and the program includes excellent entertainment for all. Albert M. Keenan, Associate Professor of Coal Mining of the Colorado School of Mines, is chairman of the Program Committee, and Robert L. Hair, General Superintendent of Fuel Mines of the Colorado Fuel and Iron Corp., co-chairman.



CHARLES B. TILLSON

● Charles B. Tillson, Jr., has been appointed General Superintendent of mines for the Crucible Steel Co. of America. Mr. Tillson was mine superintendent since 1953. Mr. A. V. Faul was made superintendent of mines. U. P. Rembold was made superintendent of preparation and Earl N. Burnham was made general foreman of preparation.

thin sections cut from coal, she hopes to employ an electron microscope.

The Science Talent Search is administered by Science Clubs of America and Science Service. It is supported by the Westinghouse Educational Foundation.

Design and construction of a solid fuel internal combustion engine was accomplished by Lawrence Ernest Williams, 17, who is a senior at East High School at Youngstown, Ohio.

Gaining his interest in solid fuel engines from the story of Rudolph's Diesel's early attempts to market a compression-ignition engine which used powdered coal, Lawrence began to experiment with combustion of solids. His experiments to find a highly combustible solid fuel involved the testing of coal, sugar, wood, flour, starch, ash, various chemicals and coffee crystals. The best fuels to use, the young scientist discovered, were dehydrated starch and coal dust.

● Edmund A. Watters, Jr., has been appointed Vice President of the Geo. S. Baton & Co., which has been Consulting Engineers since 1900. Mr. Watters will succeed Mr. L. O. Lougee, who retired on February 1, 1955. Mr. Watters will also act as Chief Engineer for the Baton Coal Company.

● R. E. Snoberger, president of Truax-Traer Coal Co. since Aug. 1, 1952, announced his resignation as president of that company on Wednesday, March 23, effective immediately. He will remain as a member of the Board of Directors of the company and will serve as assistant to the chairman of the board on a part-time basis to discharge special assignments. Mr. Snoberger suffered a slight coronary attack in October, 1953. Since that time he has improved. However, his resignation was prompted by the necessity for being relieved of the great pressures incident to his presidency of the company in order that his recovery will not be retarded. Mr. A. H. Truax is now president and chairman of the board.

● Clinton C. Cornelius was made Operating Vice President of The Baton Coal Company. Mr. Cornelius will be in charge of the operations of Greensburg-Connellsville Coal & Coke Company, which owns the Hubbard and Francis Mines; Joanne Coal Company, which owns the Joanne Mine, Farm Coal Company, which owns the Home Mine; and the Carpentertown Coal & Coke Company, which owns the Carpenter Mine and Standard Ovens.

● Thomas C. Cheasley, Vice President of the Sinclair Coal Company, with headquarters at Kansas City, Missouri died at his winter home at Wort Lauderdale, Florida.

Mr. Cheasley, who was 65 years of age, leaves a widow and two sons. He had been prominently identified with the bituminous coal industry for a long period of years and served on many important committees. At the time of his death he was active on the National's Land and Water Use Advisory Committee and he was also a member of the Natural Resources Committee of the United States Chamber of Commerce.

MILLIONS OF YARDS

2 MANITOWOC 4500's strip 3½ million yards of overburden per year for Hart and Hart, Providence, Ky.

It takes plenty of mechanical muscle to move millions of yards of tough overburden — 95% of which was rugged rock and shale!

These two big Manitowocs — a 4500 high-lift 5½ yd. shovel and a 4500 Dragline with 100' boom — powered their way through 80' of this rough going 24 hours a day, six days a week, all year long. Between them, these big workers uncovered over 478,000 tons of coal!

In addition to tremendous power, Manitowocs have the fast travelling speeds, the maneuverability, the operating speeds, and the stamina it takes to turn out big production on even the toughest jobs. These outstanding features — plus a minimum of down-time — mean profitable operation on every job! Get all the facts on Manitowoc. Manitowoc Engineering Corp., Manitowoc, Wis.





The Model 4500 Manitowoc Dragline working in pit of the Lake Erie Coal Co. near Petersburg, Ohio.

THE 1955 HORIZON OVER THE PENNSYLVANIA BITUMINOUS COAL STRIPPING REGION



Above: Loading out the top seam of coal at the Lake Erie Coal Co.

Right: Caterpillar D-8 Tractor pushing overburden on the top sea of coal at Lake Erie Coal Co.



In its slow but sure way, the coal stripping industry is keeping in step with the progress of mankind. In the Pennsylvania bituminous region, which is the heart of the coal stripping industry, the horizon plainly indicates many more of the larger type units are employed and more are contemplated. This step to larger, more efficient equipment includes the bigger tractors, bigger blast hole drills, bigger overburden haulage units and everything else that goes with larger operations.

Starting with the Lake Erie Coal Company at Petersburg, Ohio,



Left: One of the Lima Model 1201 Draglines stripping in pit of A. W. Lotze.

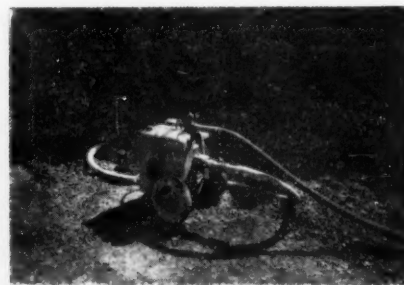
which is 1,000 yards from the Ohio State line in Lawrence County, one will find a Manitowoc Dragline with 6 yard bucket, stripping two seams of coal. The top seam runs 20 inches thick and is covered with 10 feet of loam, 10 feet of gumbo, 4 feet of shale and 2 feet of slate. The lower seam is 30 to 34 inches thick and is covered with 25 to 30 feet of fire clay, rock and shale.

Not far from Petersburg is the operation of A. W. Lotze who is using 2 Lima Paymaster draglines to strip with 2 Lima Paymaster shovels to load coal with. Lotze is stripping the same 2 seams of coal that the Lake Erie Coal Company is stripping. He was working the lower seam which has a 35 foot cover of clay, hardpan and shale. The lower seam runs 32 inches thick.

Farther East, near Harlansburg, the Chutes Brothers are using a Manitowoc Model 4500 dragline to strip 24 inches of coal.

In the vicinity of Forrestville the Boyles Coal & Supply Company is stripping a soft sandstone-shale overburden with a Manitowoc Model 3900 dragline having 3½ yard bucket. Salem drills are used to make blast holes in that overburden. Two gasoline driven Jaeger pumps keep the mine dewatered.

In some folks' minds the opinion still prevails that what people do not know does not hurt them. A child just learning to walk is told by its mother to stay away from the kitchen stove or it will get its fingers burned. Until that child has had its fingers burned one or more time it does not know what the mother meant when she kept



Above. A Jaeger Gasoline Driven pump dewater pit of the Boyles Coal & Supply Co.

Left: One of the Lima Paymaster Shovels loading out coal in pit of A. W. Lotze.



Above: Another Lima Paymaster Shovel loading out coal in pit of A. W. Lotze.

telling it to stay away from the stove. Too often the coal stripper must get his fingers burned—must lose some or all of his money—to make him realize that in order to stay in business he must keep up with progress. Were it not for the few technically trained among us, we might still be as ignorant of science and as haunted by superstitions as was the Peking man in his primeval landscape of 100,000 years ago.

Due to his biological heritage, man must travel his separate path through time and the most reasonable conclusion is that he will remain pretty much the same fundamentally and biologically for the next 50,000 years. His future will be in cultural evolution; in progress resulting from the accumulation of transferable knowledge. The wisdom of any group of men increases in direct proportion to the intensity of the individuals in the group to keep informed. Once acquired, knowledge is never lost.

Below: The 4500 Manitowoc Dragline stripping for the Chutes Brothers.



The present day man made inanimate gadgets like combustion engines, deep freezes, television, radar, etc., animated by mechanics tools, will no doubt find future historians proclaiming our lifetime had the greatest technological impact on mankind.

Near Sligo, in southern Clarion County, The Mack Coal Company uses a Manitowoc Model 4500 drag-

Below: The 3900 Manitowoc Dragline in pit of the Boyles Coal & Supply Co. Note the McCarthy Shot Hole Drill in left background.





Above: The 4500 Manitowoc Dragline working for the Mack Coal Company near Sligo.



Above: The Esco Coal Loading Bucket working in pit of the Mech Mining Company near Distant.

Right: The Caterpillar Road Grader cleaning surface of stripped coal in pit of the Mech Mining Company, near McWilliams.

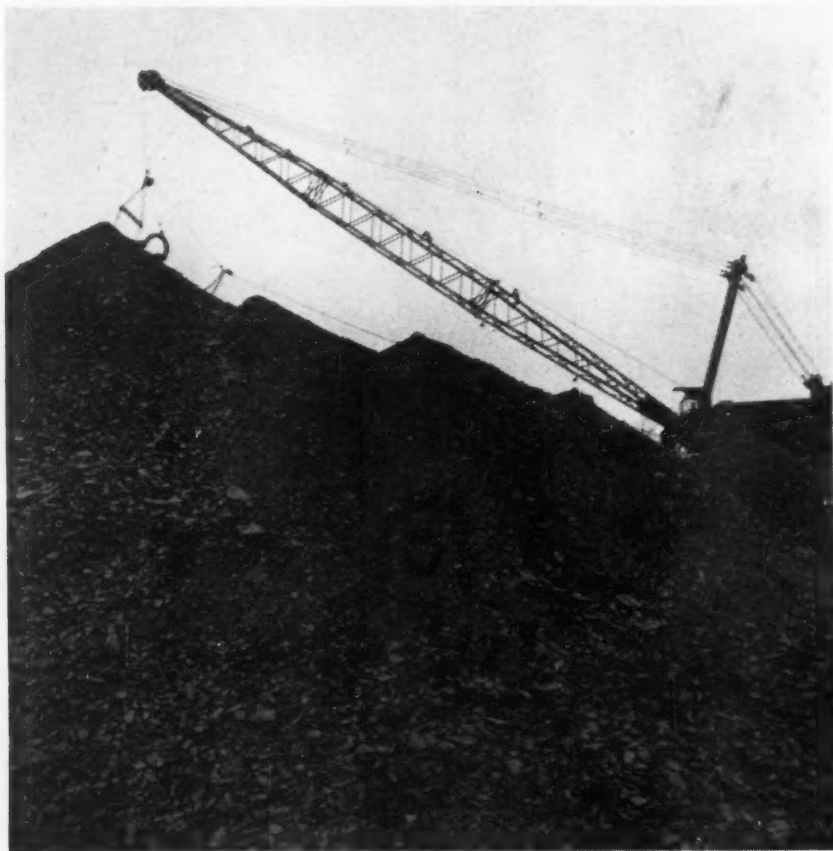




The Lima 2400 Dragline stripping for the Mech Mining Company near McWilliams.



Above: The Manitowoc 3500 Shovel loading out coal in pit of the Mech Mining Co., near McWilliams. The $3\frac{1}{2}$ Esco Coal Loading Bucket is used on this shovel.



line to strip a heavy slaty shale off about $3\frac{1}{2}$ feet of coal.

In Armstrong County the Mech Mining Company is carrying on two operations in the Freeport seam. At its operation near McWilliams it uses a Lima Model 2400 dragline with 7 yard bucket. Overburden is mostly a soft sandstone. Uncovered coal is cleaned with a Caterpillar Motor Grader. The coal is loaded out with a Manitowoc Model 3500 shovel, equipped with 3-yard Esco coal loading bucket. At the other operation of Mech Mining Company, near Distant, stripping is done with a Page Model 621 dragline with 7 yard Esco bucket. The Freeport seam of coal runs as high as 10 feet at times in this area. A Caterpillar Motor Grader is used to clean the

Left: The 4500 Manitowoc Dragline working for G. A. Styles at Miola.

surface of stripped in this pit also. Coal is loaded out with a 2½ Esco coal loading bucket.

At Liola in Clarion County, about 6 miles north of Clarion, G. A. Styles is stripping with a Manitowoc Dragline. A Caterpillar D-8 tractor works with this dragline.

At Strattonville, in Clarion County, Carrier & Son are using a Manitowoc Model 4500 dragline.

At Corsica, in Jefferson County, Perth Stahlman uses a Manitowoc Model 4500 dragline with 6 yard bucket to get 30 inches of coal which is covered with loam, some rock, and shale. Up to 45 feet of cover is moved.

Farther east, in Clearfield County, Earl Brown is using a Caterpillar D-8 tractor equipped with the new Caterpillar U-Blade. It is being claimed that this U-shape enables the blade to push at least 1/3 more dirt.

Between Keewaydin and Kylerstown, Robert Baily is using a Lima Model 2400 dragline to move a tough slaty rock cover off coal.

South of Madera the Dubois Coal Company uses a Manitowoc Model 4500 dragline to move slaty rock and shale off the Moshannon seam of coal. This overburden is drilled with the late type Davey rotary drill. A new Caterpillar tractor equipped with the new U-blade is

(Continued on Page 20)

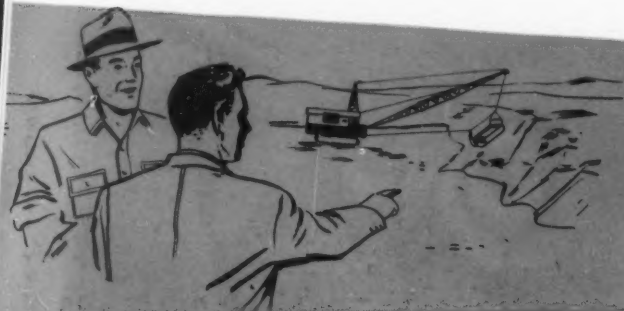


Above: The 4500 Manitowoc Dragline of Carrier & Sons stripping at Strattonville.



Left: The Caterpillar Tractor working with the Dragline in pit of G. A. Styles.

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Like other leading operators, MARTELL MINING CO., Surveyor, strips with Allis-Chalmers HD-20s.



Allis-Chalmers Scraper on BEN CONSTRUCTION CO. job, Saltsburg.

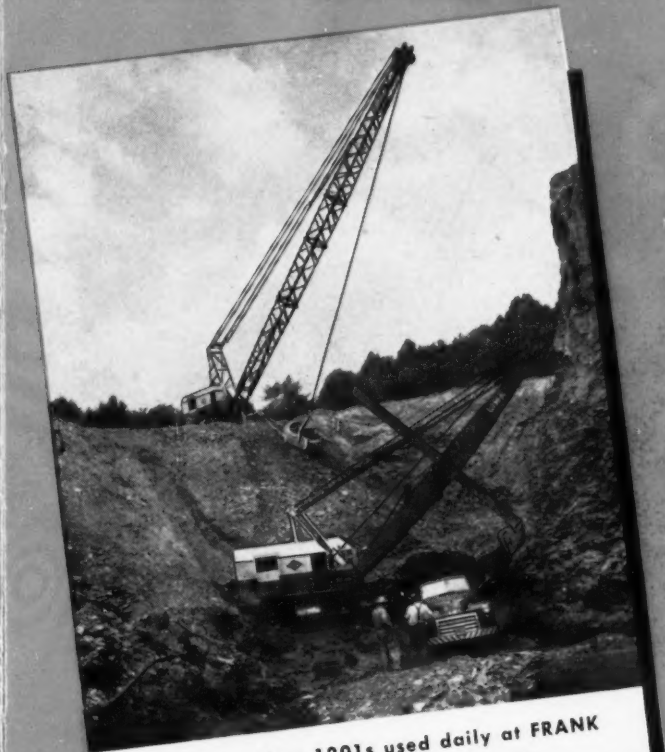
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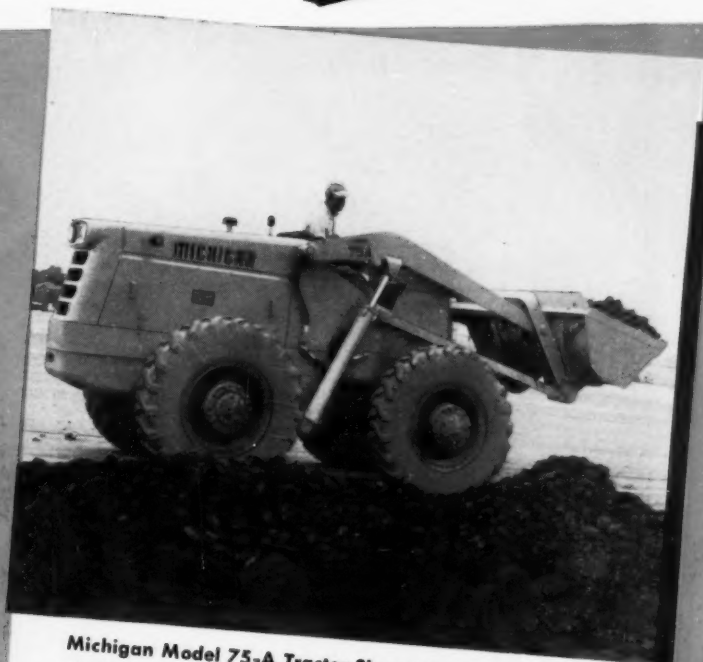
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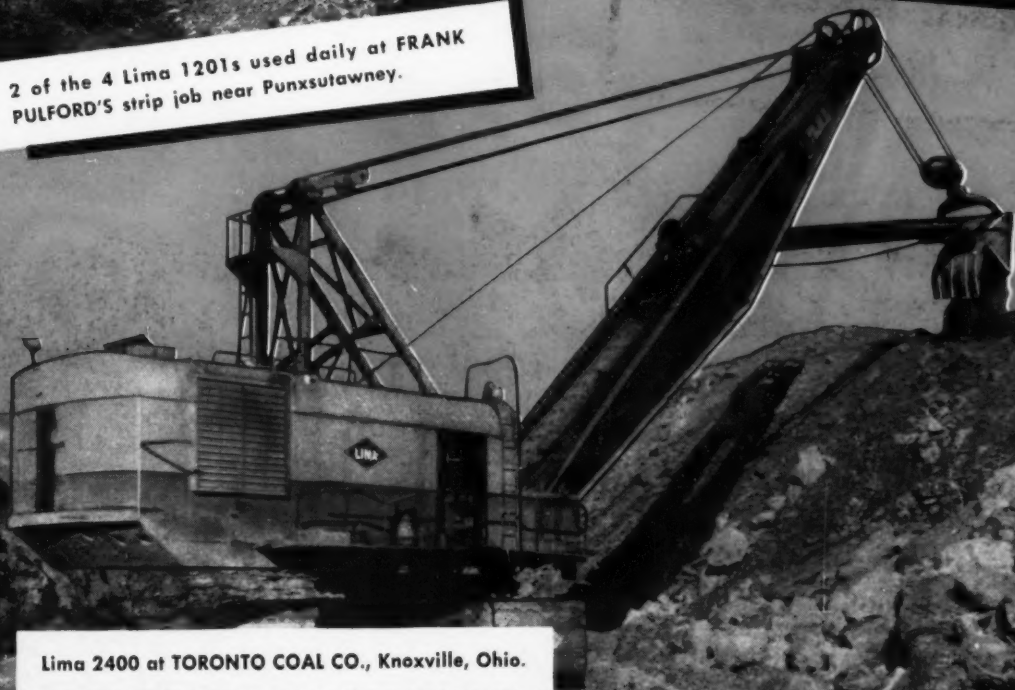
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who use equipment from *Highway*



2 of the 4 Lima 1201s used daily at FRANK PULFORD'S strip job near Punxsutawney.



Michigan Model 75-A Tractor Shovel loading coal from stockpile.



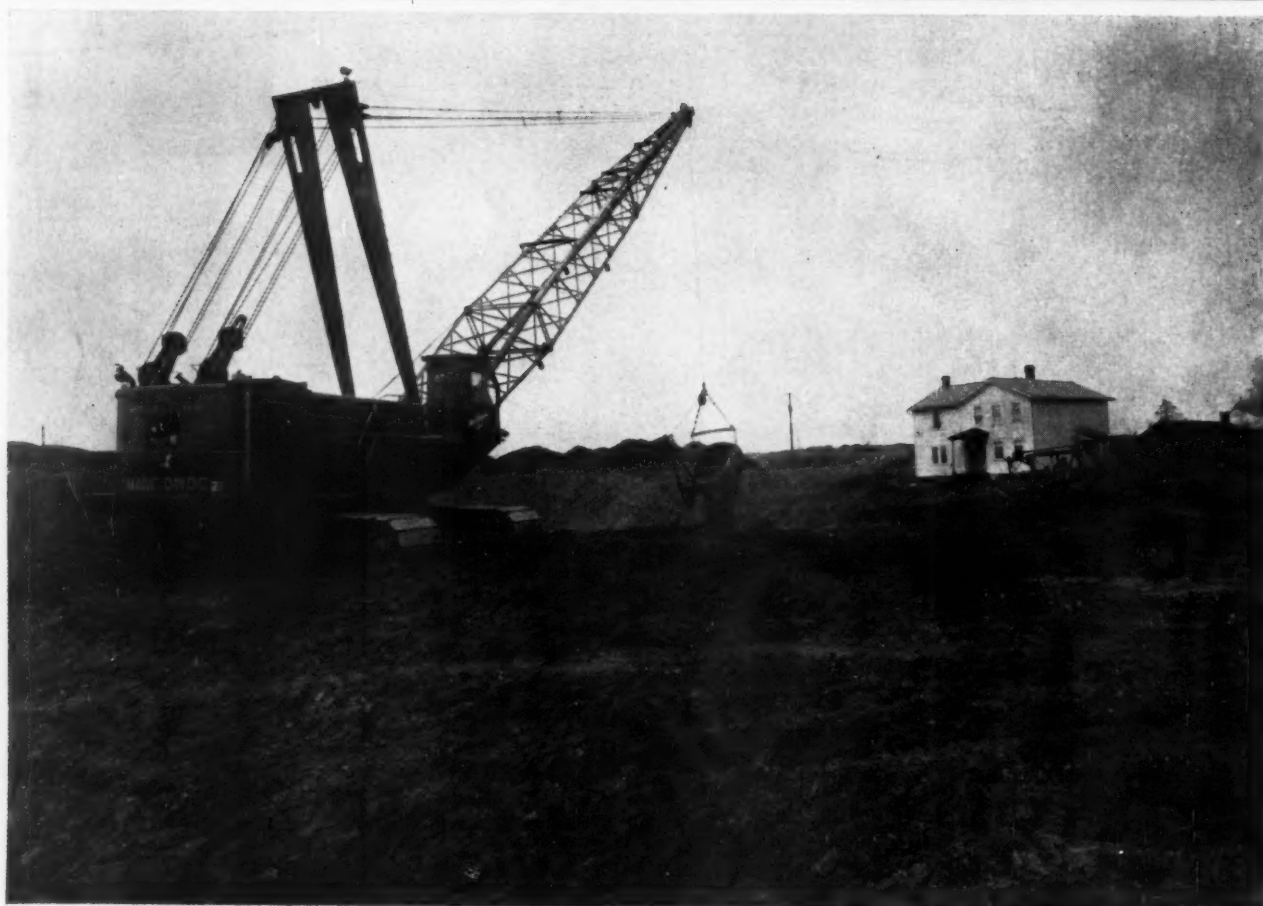
Lima 2400 at TORONTO COAL CO., Knoxville, Ohio.

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Left: The 4500 Manitowoc Dragline stripping for Perth Stahlman at Corsica.

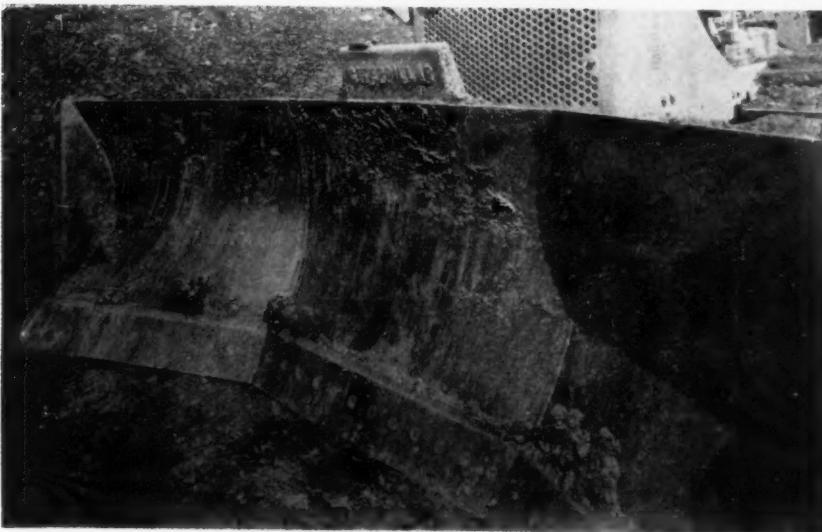


Right: The new Caterpillar U-Blade pushing overburden at the operation of Earl Brown, near Clearfield. Note the shape of the dirt being pushed.

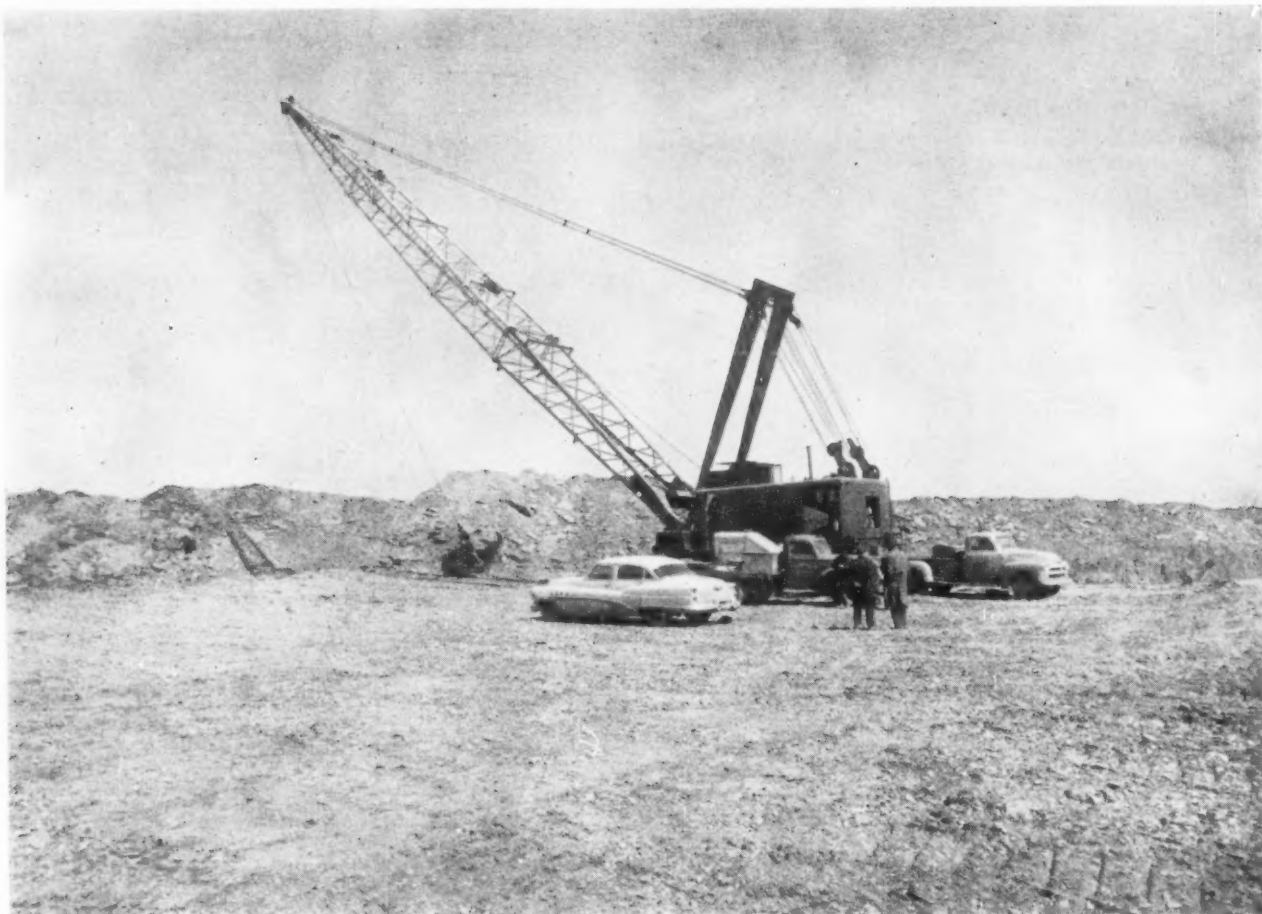


Right: The new Caterpillar Tractor with U-Blade pushing overburden at the Du-bois Coal Company.

Right: Close-up of the new Caterpillar U-Blade on the Tractor of the Benjamin Coal Co.



Left: The 2400 Lima owned by Robert Baily working North of Kylertown.



Looking at the Manitowoc Model 4500 at the operation of the Dubois Coal Company during the period of oil change. The area in the foreground has been drilled with a new Davey Rotary Shot Hole Drill.



Close-up of the new Davey Rotary Shot Hole Drill, at the Dubois Coal Co.

THE 1955 HORIZON

(Continued from Page 15)

used here to prepare the surface for the dragline and to backfill. The pits are dewatered with Jaeger pumps.

Near McCartney, the Benjamin Coal Company is using a Manitowoc Model 4500 dragline and a Marion Model 111 dragline to strip the "D and E" seams. The Manitowoc is moving clay and yellow shale off the top "D" seam and the Marion dragline is moving a hard shale and rock cover off the lower "E" seam. This company also has one of the new Caterpillar D-8 tractors with U-blade which it uses for backfilling.

Near Bigler, the Thompson Coal Company is using a Lima Model 2400 dragline to move a hard shale overburden. Surface of the stripped



One of the Jaeger Dewatering Pumps at the Dubois Coal Co.

coal is cleaned with an AD 40 Allis-Chalmers dual drive grader.

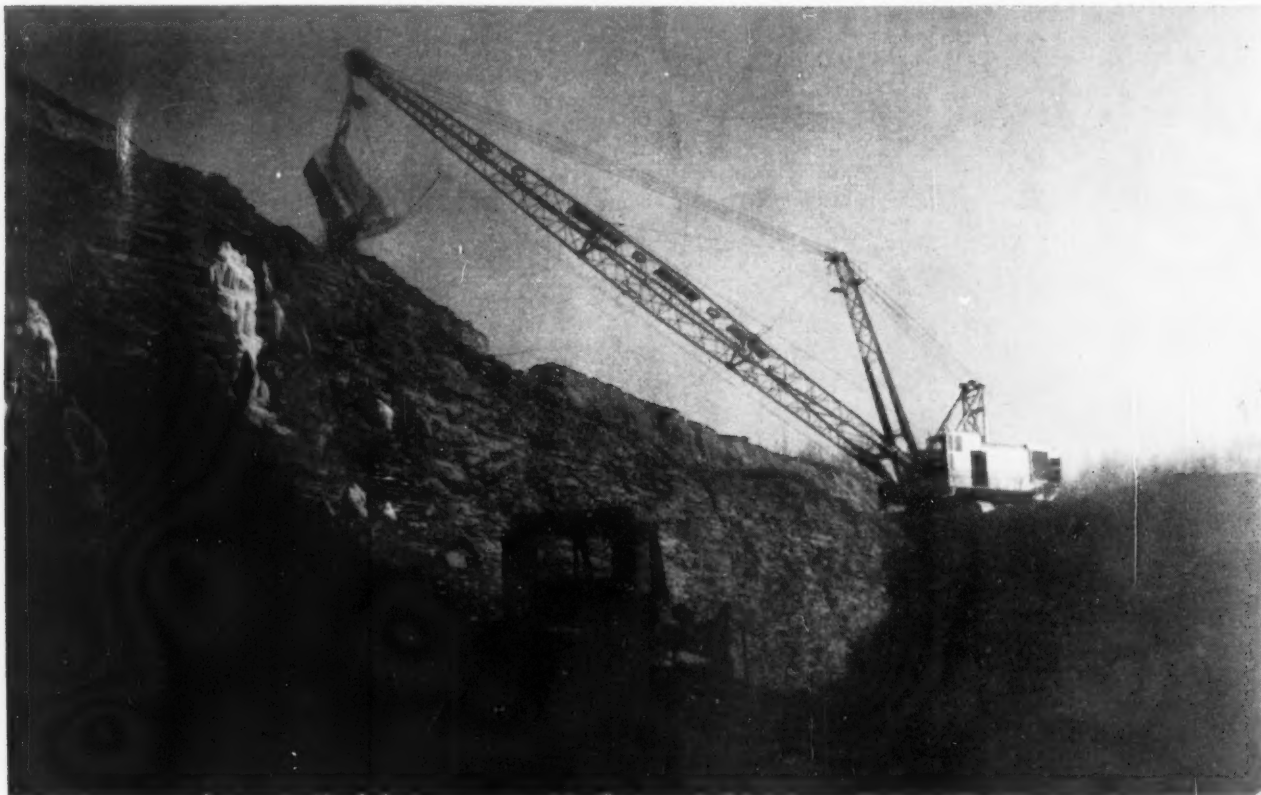
In Centre County, about 6 miles east of Philipsburg, The K & J Coal Company is stripping the old Dugan Coal Company property. Cover is moved with the Lima Model 1201 dragline equipped with a 3½ yard Hendrix bucket. One of the new Allis-Chalmers H-D 21 tractors is used here to backfill and do other general pushing work.



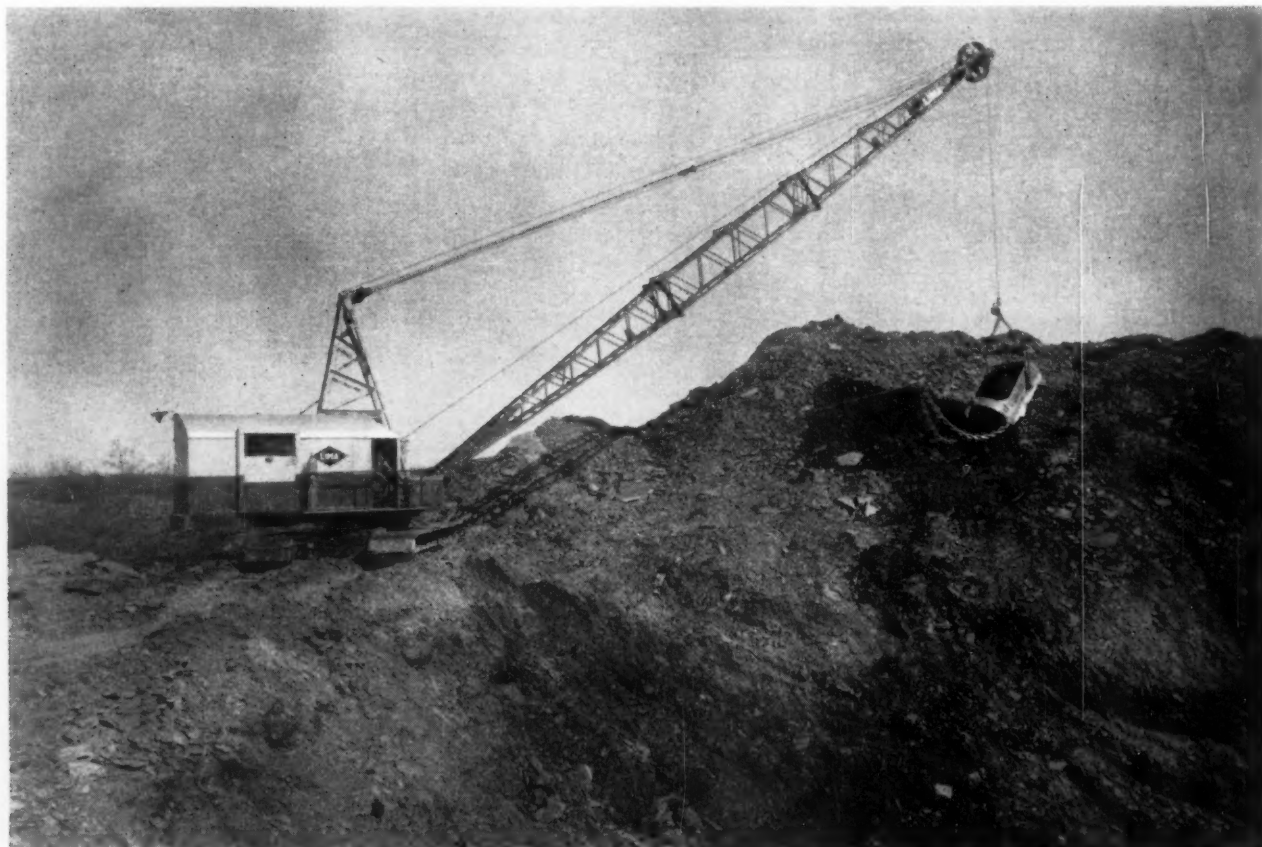
The 4500 Manitowoc Dragline stripping for the Benjamin Coal Co.



The Marion Model 111 working at the Benjamin Coal Co.



The Lima Model 2400 Dragline at the Thompson Coal Company. In the pit is the AD 40 Allis-Chalmers dual drive grader.



The Lima Model 1201 Dragline stripping for the K & J Coal Company in Centre County.



The new Allis-Chalmers Model 21 Tractor pushing spoil at the K & J Coal Company.

● "MOVING THE EARTH, The Workbook of Excavation," by Herbert L. Nichols, Jr., 1280 pages, 6 $\frac{3}{8}$ x 9 $\frac{1}{2}$; 1266 illustrations, glossary index. Bound in Fabrikoid. Publication March 31, 1955. \$15.00. North Castle Books, 212 Bedford Road, Greenwich, Conn.

This long awaited book is of interest and potential value to everyone in the excavating industry,

from engineer and contractor to operator and student, and from manufacturer to his distributors' salesmen. Property owners, public works officials, and grounds maintenance men should also find it useful.

"MOVING THE EARTH" is a massive, heavily illustrated book, the first practical reference work to cover the whole field of earth-

moving. It is in two sections. The first, "The Work," includes chapters on clearing, rough surveying, soil and mud, cellars, ditching and drainage, ponds, landscaping, roads, blasting and tunneling, pits, and financial management. The approach to each operation is clear, practical, and thorough enough to serve as a complete working guide.

The second part, "The Machines," is a detailed discussion of practically every type of earth-moving equipment, covering construction, operation, and job application. Chapter headings are: Basic Information, Revolving Shovels, Conveyor Machinery, Tractors and Bulldozers, Tractor Loaders, Scrapers, Dump Trucks, Grading and Compacting Machinery, Compressors and Drills, and Miscellaneous Machines.

● Cardox Corporation, Mining Division announces the appointment of Joseph C. Hume as assistant district manager for southern West Virginia with headquarters in Logan, West Virginia. Mr. Hume became associated with coal mining in 1944 as production engineer for the Blue Diamond Coal Company and has been active in mining ever since, joining Cardox Corporation in 1949 as a field engineer.



One of the Marion 5560 Series of large strip shovels at the Hanna Coal Company in Ohio. This series ranges in size from 40 yard dipper up. The Marion Power Shovel Company is building one for the Hanna Coal Company which is expected to move 70 yards per dip.

● A new rotary air drill for heavy-duty service is announced by Davey Compressor Co., Kent, Ohio.

Designated as Model M-8A, it is recommended for core drilling, water well drilling, structure testing and the drilling of shot and blast holes. Because of its employment of a new "air-blast" technique, it is said to drill faster and more economically than previously-available rotary drills.



Rear view of Davey Model M-8A Rotary Drill. Controls are grouped at left rear for operator's convenience.

Rated capacity of the drilling machine is $5\frac{3}{8}$ inch holes to a depth of 150 ft. with aid and $6\frac{1}{4}$ inch holes to 1,000 ft. with mud.

Suitable for mounting on any make of truck, the rotary drill may be driven by a power take-off from the truck engine or by a separate gasoline or diesel engine.

Its 8-inch rotary table has a capacity sufficient to support and rotate 100,000 lb. loads. Draw works are of the 2-drum type, with line capacity of 470 ft. of $\frac{1}{2}$ inch line per drum.

Air compressor for "air-blast" drilling is a Davey Model X300 or X400 (400 or 500 c.f.m.) unit, depending upon individual requirements.

The machine's mast is of tubular open-face box type construction. It has a fabricated steel crown block assembly with two 20-inch diameter roller bearing sheaves. Height from bottom of crown to top of rotary table is either 24 or 28 ft., in accordance with the operator's needs. It allows for pulling 20 ft. sections of drill pipe. Mast is raised and lowered with 20,000-lb. rated hydraulic cylinders.

Weight of the complete unit, including a recommended truck, is approximately 20,000 lbs.

● New design features for the No. 6 and HT4 Traxcavators have been announced by Caterpillar Tractor Co., Peoria, Illinois.

Triple grouser shoes are now standard equipment on both the



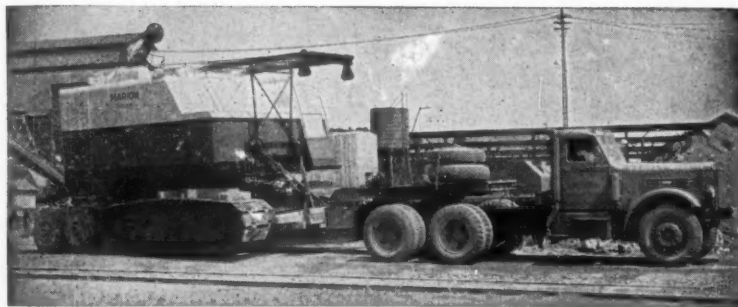
Factory-approved training facilities by the Detroit Diesel Engine Division of General Motors Corp. are being brought direct to distributors and users. The above picture was taken during a class at the Highway Equipment Co., Pittsburgh, Pa.

No. 6 and HT4 Traxcavators. These shoes have three full width, low profile grousers 11/16-inch high. Triple grouser shoes give better traction than the flat center shoe, while still retaining the flat surface feature needed for hard-surface operation. The flat type track group will be available as an attachment. Present No. 6 and HT4 Traxcavator owners whose machines are working in the field with the flat shoes and who desire the better ground-gripping traction of the triple grouser may obtain the new shoe from Caterpillar Dealers.

The No. 6 Traxcavator will also feature as standard equipment the front section of the crankcase guard and a new full flow hydraulic oil filter which will greatly extend the life of the hydraulic pump, cylinders and valves.

A new, improved transmission has become standard on the HT4 Traxcavator. This transmission arrangement provides a new shift pattern, thus making the operator's job easier. The reverse speed of the HT4 has been decreased, also, to make the unit usable on steeper grades and on softer ground.

MOVERS OF COAL STRIPPING AND CONTRACTOR'S EQUIPMENT



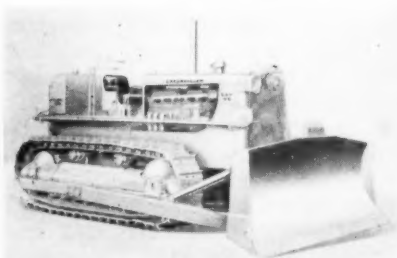
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This is the newly introduced Caterpillar D8 Tractor which is more powerful, easier to operate, easier to service and presents modern new lines throughout. This tractor is offered with a torque converter (Series D) and with a direct drive (Series E). This unit is equipped with a Cat 8S Bulldozer and a new Cat No. 29 Cable Control, both of which have been designed especially to fit this new tractor.



MILTON T. SMITH

● Milton T. Smith has been elected Vice-President of the equipment division of Merritt-Chapman & Scott Organization, new owners of the Marion Power Shovel Co.

● A new Motor Scraper, the TS-360, is now in production at the Cedar Rapids, Iowa, plant of Allis-Chalmers Mfg. Company. According to the announcements, tests of the new rubber-tired giant indicate that it establishes a new high in dirt-moving ability.

To meet the stepped-up needs of the construction industry for more power, better performance and longer life, the TS-360 Motor Scraper offers many important new advantages. Weighing 49,000 pounds, it has 15-cu.-yd. struck capacity, 20-cu.-yd. heaped capacity and features a new 280 hp. Allis-Chalmers diesel engine.

This new engine spearheads a whole new power train that offers more rim pull at all speeds for better loading, hauling and spreading performance; plus faster acceleration, easy shifting and quick getaways. In addition, gears, shafts and bearings have been completely re-engineered to assure ex-

tra-long life. For instance, final drive gears are not only larger and heavier but toth design has been changed to provide more even toth loading, plus added strength and rigidity.

One of the most fundamental changes in this Motor Scraper is the introduction of a completely new tractor main frame which makes possible all the advantages of "unit construction" for which Allis-Chalmers crawler tractors have so long been famous. This facilitates

easy removal and servicing of both major and minor assemblies in the



The new Allis-Chalmers Model TS-360 motor scraper. It has a 15 cubic yard struck capacity and a 20 cubic yard heaped capacity and is powered by a new 280 hp. Allis-Chalmers diesel engine.



Here are three good ways to put go in your mining system. (1) A Jeffrey 70-UR Universal Cutter for bottom, top and shear cuts, (2) a Jeffrey 56-FHR Face Drill for powder hole drilling, (3) a Jeffrey 81-A Loader for high-capacity loading. Watch your production go up, up, up when you install this team!

ONE The 70-UR Cutter has rugged versatility. Head and cutter bar can be rotated 360° in either direction and positioned to make any kind of cut any place in the seam. The 70-UR gives smooth, positive traction for cutting a straight rib when sumping, sure-footed stability when cutting across the face, and quick and accurate response on all adjustments.

TWO The 56-FHR Face Drill provides utmost flexibility in operation. Drilling head can be swung

by finger-tip control to any desired position for shot hole placement. It's completely hydraulic in operation, including the cable reel. Drilling range is 7' 2 5/8" vertically and 13' 1 3/4" horizontally.

THREE The 81-A Loader, a well-balanced crawler machine, has a rated capacity of 8 TPM and a maximum capacity of 10 TPM. Features like the fully gear driven head and the separate, detachable motor and gear cases make the 81-A a superior loader in both production and maintenance.



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TS-360. Example: the engine can be removed without removing the transmission, and the clutch can be removed without removing the engine.

The TS-360 introduces many new operating advantages such as selective steering. A single hydraulic valve provides a controlled flow system in which slight movement of the steering wheel utilizes low pump pressure to give fine control for safe steering on the haul road; full movement of the steering wheel utilizes full pump pressure for easy maneuverability in tough going in the borrow pit.

Double-Safety air brakes provide

another advantage. This system includes a protective valve on the tractor unit and an emergency relay valve on the scraper similar to those used on large highway truck-trailer combinations. Thus, even if an air line should be broken through conditions beyond the operator's control, the system retains adequate air pressure for safe stopping.

The TS-360's scraper is equipped with a new multiple-disc cable control unit which provides immediate response to movement of the control levers. A new and important feature of this unit is a new control which automatically stops cable

travel at maximum lift to prevent cable shock and extend the life of both the cable and the control unit.

● In order to provide even greater versatility, the air output of the Le Roi Tractair has been increased from 105 to 125 cfm. The new and more powerful Tractair has been introduced at the same list price as the previous model; \$3,688 FOB factory.

The tractair is a combination 125 cfm air compressor and a 35 hp wheeled tractor resigned primarily to bring compressed air power to otherwise hard-to-get-at places. Equipped with air tools and other attachments the unit can perform the work of much more expensive combinations of single purpose equipment. For example, greater man-power and a larger capital investment is required to transport ordinary street type compressors from job to job.

New standard equipment on the Tractair includes additional piping, larger carburetor, and aftercooler. The governed speed of the 125 is 1,350 rpm.

An Econotrol has also been added to the tractair as standard equipment. This will vary the engine speed to match air demand. Engine life will be extended since this control will keep the speed down except the occasional times when full 125 cfm capacity is used.



The new 125 cfm Tractair has added as standard equipment a larger carburetor, aftercooler, Econotrol, and additional piping. The new unit replaces the 105 cfm model.

The Econotrol has a "start-run" lever allowing the operator to warm up a cold engine at idle and switch to "run" after the engine is warmed. This advantage is especially important in colder climates.

The power plant used in the Tractair is the Le Roi D226 engine combined in a single block with a well balanced two-cylinder compressor. The unit construction crankcase and cylinder block, as well as the

SCOTTDAL MACHINE, FOUNDRY & CONSTRUCTION CO.

DEPT. CM

BOX 51

SCOTTDAL, PA.

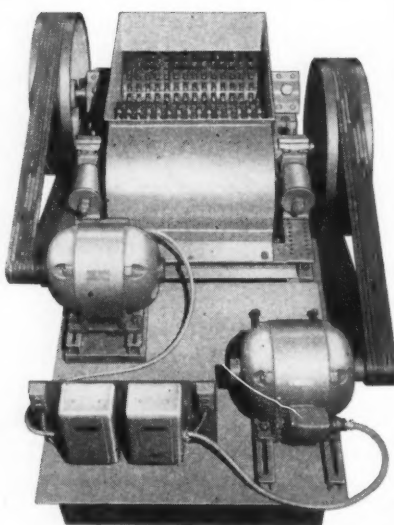
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Efficient and practical the shredding action of the crusher's tooth studded double rolls turns out a more consistent product. Quality produced forged steel tooth gears, welded steel base, bronze bushed journal bearings, welded steel hopper and grooved flywheels.

counterweight crankshaft, serve both units.

The rubber-tired Tractair, has five traveling speeds with a maximum speed of 17 mph. The high ground clearance of the Tractair allows it to "step" through obstructed terrain. Combined with generous clearance, the low center of gravity allows the unit to operate on a two-to-one slope.

Here are some of the Tractair attachments which can be applied to a variety of jobs: Mobildrill, highway patch drill, multiple tamper, winch, front end loader, backfill blade, utility boom, and utility platform. Year 'round usefulness is assured by using the snow plow attachment or rotary sweeper.

First introduced in 1946, the Tractair was for five years the only tractor-air compressor unit of its kind manufactured.

● A Marion 5323 coal stripper—one of the largest pieces—of excavating equipment ever shipped to South America—was recently loaded aboard ship at Baltimore, Md., for shipment to Brazil.

The machine, designed and built by the Marion Power Shovel Company of Marion, Ohio, was shipped in 190 separate pieces and it occupied 60,000 cubic feet of space on the cargo liner MORMACDOVE, one of the fleet of the Moore-McCormack Lines. Shipment of the machine from Marion to the Western Maryland Railroad pier in Baltimore required 33 rail cars. With its 20 cubic yard dipper the 5323 will weigh about 1,735,000 pounds when it is assembled.



When assembled in Brazil, the 5323 will look like this. Thirty-three railroad cars were required to ship machine parts and assemblies from Marion, Ohio, to the Western Maryland Railroad pier at Baltimore, Md.

Final destination of the machine is the Cresciuma region of the State of Santa Catarina in south Brazil, about 110 miles from Imbitura, the port of arrival of the 5323. The machine was purchased by Carbonifera Treviso, S. A., a new coal exploration company organized to develop coal fields in the area with modern methods and equipment. Officers of the firm are directors and stockholders in many of Brazil's most important industries.

The Marion stripper shipped to Brazil is similar to many machines of the same model used for stripping in the United States. It makes use of a knee-action front end which shifts weight of the crowd machinery to the gantry, near the center of rotation. This feature, originated by Marion, permits larger loads than were formerly possible.

● Increased horsepower and engine speed highlight many new engineering improvements which have been introduced in the new D7 track-type Tractor announced by Caterpillar Tractor Co.

The engine in this new tractor has 128 horsepower at 1,200 rpm compared to the 108 horsepower at 1,000 rpm in the previous model. The maximum drawbar pull for the D7 is now 28,700 pounds, approximately 3,500 pounds pull more than its predecessor.

Another important innovation designed to improve the new tractor's operation is an engine balancer which reduces vibration and permits the four-cylinder engine to operate at 1,200 rpm with the same degree of smoothness as a six-cylinder design.

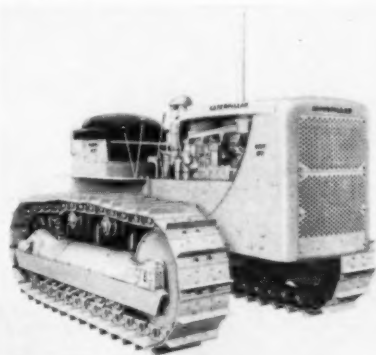
Other new major engineering features which contribute to greater productive capacity in the new D7 include: redesigned engine block; new fuel injection system; a new starting engine; new radiator; large fuel tank; new fuel filter system; redesigned oil filter base adapter; and improved air cleaner.

The cylinder block on the D7 was redesigned to include many improvements which give the engine greater power and smoother operation. It now presents a much

smoother surface since all of the oil lines are located within the block. This simplifies removal of the head. The oil passages in the block from the oil pump to the oil filter and the manifolds have been made larger to reduce the restriction to oil flow. The new block also has enlarged water passages to handle the greater water flows.

A new fuel injection pump, new injection and capsule-type valves are featured in the D7's improved fuel injection system.

Quicker starts are obtainable with the more powerful starting engine now standard on this tractor. This starting engine has a single lever control for greater ease of operation.



A radiator which provides full width water cores is being introduced on the D7. The additional water core allows a reduction in fan horsepower. A 29-inch-diameter fan requires considerably less horsepower.

Capacity of the D7's fuel tank is now 85 gallons, a 15 gallon increase over the predecessor model.

New low-cost, efficient, impregnated paper filter elements are used in the redesigned fuel filter compartment. This element is smaller than the cotton wound elements formerly used on the D7. However, with minor modification, this housing can still be adapted to the cotton wound units when necessity demands.

Redesigning of the oil filter base adapter eliminates the need for any external oil lines.

The new water pump, mounted on the front face of the timing gear housing on the left hand side, has

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Drills holes faster—Will not snap off shank or chip points—Outlasts four or five ordinary augers.

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greater capacity and efficiency.

The new 10-inch diameter tray type air cleaner will provide the D7 with an improved efficient cleaner of sufficient capacity to handle the larger volume of air used by the engine. Larger air pipes from the cleaner to the manifold are also provided.

● Joy Manufacturing Company, Oliver Building, Pittsburgh, Pa., has announced a new larger model in its Champion line of blasthole drills. The new model is the Super



Heavyweight Champion (Model 60-BH), a rotary-airblast drill designed for 9" to 12" holes in any rock formation. Like other champion models, the Super Heavyweight

continuously pressure cuts the rock with a roller-cone type bit while a blast of compressed air continuously removes cuttings from the hole.

FOR SALE

We offer the following equipment for sale, subject to inspection and to prior sale, F.O.B. our mine, terms net cash.

Two—General Electric 200 K.W. rotary synchronous converters, serial No. 2238746 and No. 1423805, type No. TC-6 form "P", 1,200 R.P.M., 250-300 volts D.C., 667 amps., 60-cycle, 50° rise, complete with hand circuit breakers, all necessary switch gear and panel boards and, including a total of six transformers, General Electric type No. HR, form "K", 75 K.V.A., capacity 2,300/4,000 volts, 185—92.5, reactance of 5%, 60-cycle.

One—No. 3JCM-2BE Joy continuous miner, 250 volts D.C., U.S. Bureau of Mines permissible plate, approval No. 2-773, serial No. JM-247.

One—No. 4-WS-2 Joy skid mounted high pressure water spray unit, 250 volts D.C., permissible plate, serial No. WS-157.

Approximately \$14,000 worth new spare parts for above continuous miner.

One—No. 12BU-9E Joy loading machine, serial No. 3696, approval No. 595 with permissible plate, 250 Volts D.C., with rear conveyor to load into mine cars or shuttle cars.

Approximately \$1,600 worth of new spare parts for above loading machine.

Also approximately \$2,400 worth of new spare parts for model No. 6SC5E-2 Joy cable reel shuttle car.

All of the equipment listed above is in excellent condition and some of it may be inspected in operation. We will sell at very attractive prices or will trade for No. 11BU Joy loaders, No. 512 Goodman shortwall mining machines, Universal cutting machines of any standard make, or possibly other equipment which you may have available for trading.

If you wish to make inspection of any of the above equipment or to make us an offer for purchase or for any trades, as indicated, please communicate with

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3500 Manitowoc Diesel Dragline, 80' boom, 2 1/2 yard bucket. Fine condition.

802 Lima Combination Highlift and Dragline.

Model 604 Lima 1 1/2 yd. Dragline, 65' boom, D13000 Caterpillar engine.

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Page 621 Diesel Walker Dragline with 130' boom 7 yd. Bucket. Can be inspected while operating.

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Osgood 1006 with 2 1/2 yd. bucket. Late model 7200 series shovel.

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CASE HISTORY No. 1A3-16**

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INSTALLATION: Six GM Diesel-powered Dart trucks . . . three 20-ton rear-dumps and three 40-ton bottom-dumps. GM Diesel-powered Bucyrus-Erie #38-B shovel with 2¼-yard bucket. The company also operates three 20-ton bottom-dumps powered with 4-cycle Diesels.

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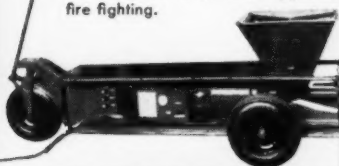
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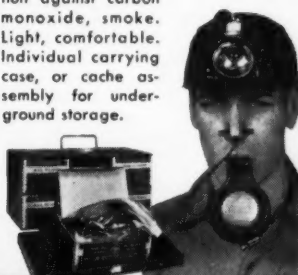
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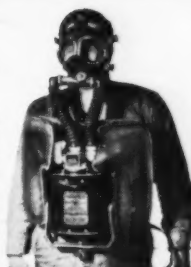
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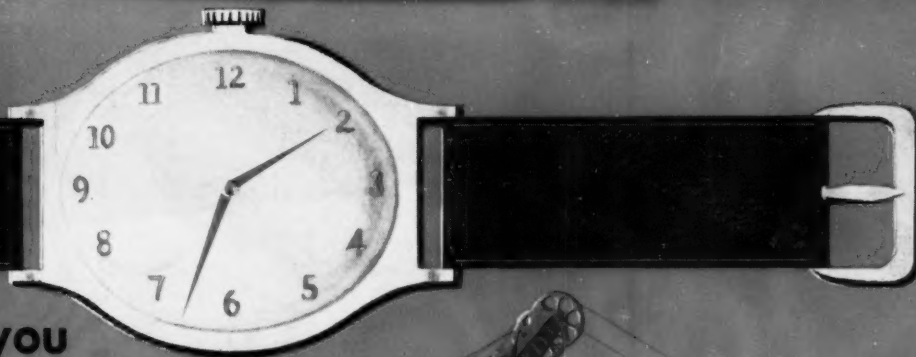
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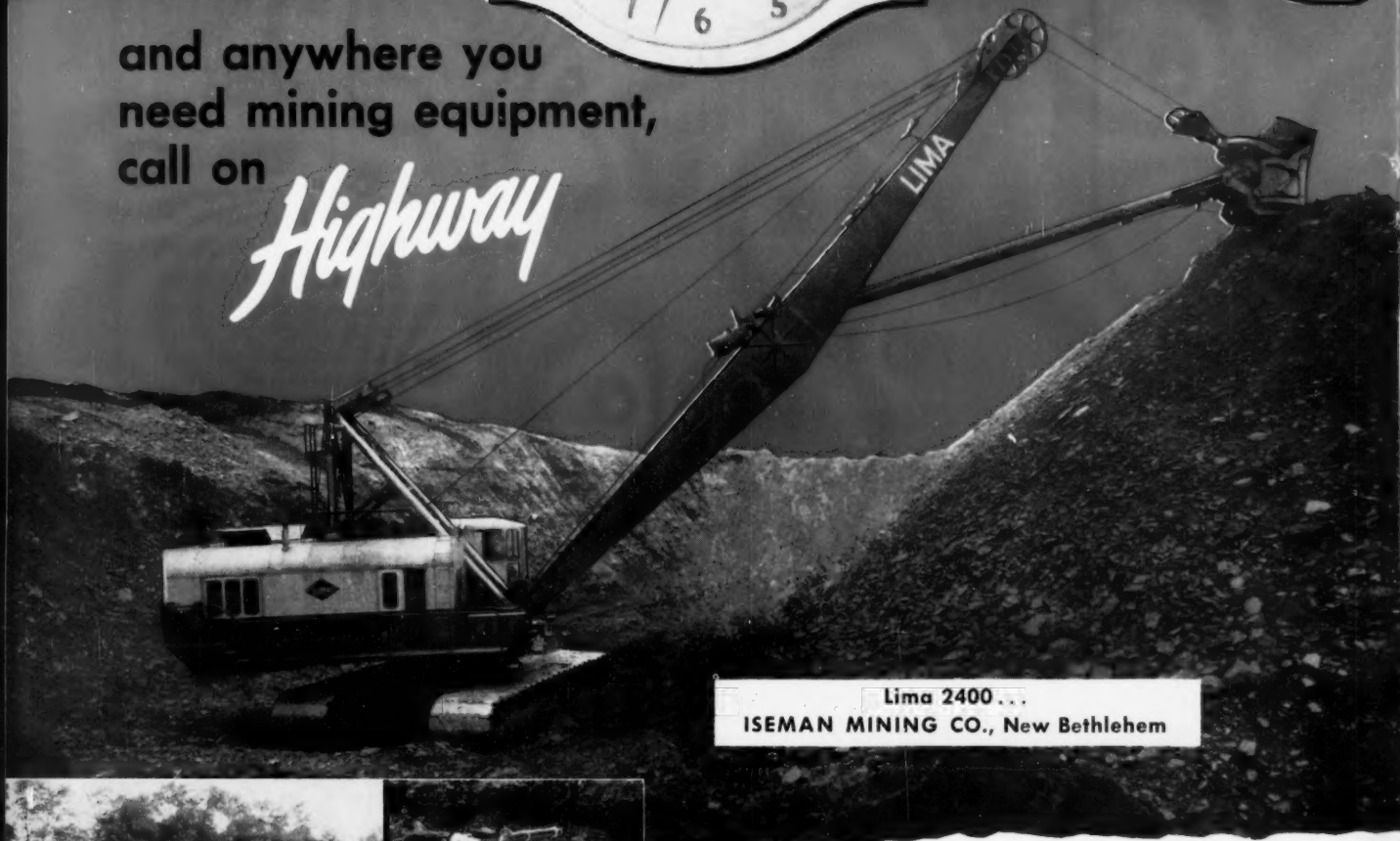
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